

THE LIFE HISTORY OF *PHILIRIS PHILOTAS PHILOTAS* (C. FELDER) (LEPIDOPTERA: LYCAENIDAE)

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Abstract

The life history of the Indonesian lycaenid butterfly *Philiris philotas philotas* (C. Felder) is described and illustrated. The larval food plant is *Macaranga* sp. nr *aleuritoides* F. Muell. (Euphorbiaceae).

Introduction

The genus *Philiris* Röber contains 64 named species (Sands 1986, Ring and Olive 1997) although more are likely to be discovered, especially in mainland New Guinea where most of the known taxa occur (Parsons 1991, 1998). The genus extends from the Moluccas [Maluku] through mainland New Guinea to the Bismarck Archipelago and into northern Australia (Parsons 1998).

Biological information for the genus is limited and outside Australia the early stages and larval food plants have been recorded only for *P. moira* (Grose-Smith) (Forbes 1977), *P. ziska* (Grose-Smith), *P. intensa* (Butler), *P. dinawa* (Bethune-Baker), *P. agatha* (Grose-Smith), *P. helena* (Snellen), *P. diana* Wind & Clench, *P. violetta* (Röber), *P. praeclara* Tite and *P. harterti* (Grose-Smith) (Parsons 1984, 1991, 1998). Listed food plants belong to the families Moraceae, Urticaceae, Euphorbiaceae and Lauraceae (Forbes 1977, Parsons 1984, 1991, 1998).

During June and July 1996, the early stages of *P. philotas philotas* (C. Felder) were discovered on the Indonesian islands of Ambon and Seram in the Moluccas. Sands (1981) examined 16 males and 6 females from Ambon and the taxon is otherwise known from Seram, Buru, Goram and Watubela Islands, all in the southern Moluccas. A second subspecies, *P. p. obiana* Tite, is known from Obi, central Moluccas.

Life history

Food plant. *Macaranga* sp. near *aleuritoides* F. Muell. (Euphorbiaceae).

Egg (Fig. 1). Diameter 0.65 mm; white, spherical, with numerous long (up to 0.08 mm) spines that are flattened towards the egg periphery.

Larva. First instar: length 1.1 mm, width 0.55 mm; hairy, pale yellow-green with darker dorsal band. Third instar: length 8.1 mm, width 3.2 mm; hairy, flattened laterally, green with indistinct yellow dorsal stripes. Final instar (Fig. 2): length 14.2 mm, width 5.0 mm; similar to third instar but with arcuate yellow cusps, forming up to six parallel dorsal stripes.

Pupa (Fig. 3). Length 9.4 mm, width 4.1 mm; strongly oval in shape, hairy, green with darker dorsal band bounded by yellow on abdomen, posterior lateral margins of thorax dark green.



Figs 1-3. Early stages of *Philiris philotas philotas*. (1) egg; (2) mature larva, dorsal view; (3) pupa, dorsal view. Scale bars (1) = 0.4 mm; (2, 3) = 2 mm.

Discussion

The eggs were laid singly on the underside of leaves of the food plant, usually beside a vein. Young larvae fed on the epidermis on the underside of mature leaves, producing a distinctive scarring in affected leaves. Mature larvae produced a series of holes, usually adjacent to the midrib. Pupation occurred head upwards, attached by cremaster and central girdle on the underside of a mature leaf of the food plant. The dorsal abdominal brown patch, present in pupae of several *Philiris* species, appears to be poorly developed in *P. philotas*.

Larvae most commonly were found on the *Macaranga* food plants growing in well-lit clearings on steep hillsides and limestone karsts. *Macaranga* species have been recorded as food plants for *P. agatha* and *P. helena* by Parsons (1984, 1991, 1998) in Papua New Guinea and for *P. sappheira*

Sands by Ring and Olive (1997) and *P. nitens* (Grose-Smith) by Valentine (1988) and Muller (1998) in northern Queensland.

Adults of both *P. philotas* and *P. ilias* (C. Felder) were collected together in secondary rainforest and settled 2-8 m above the ground. Males exhibited territorial behaviour in strong sunlight, returning to perches head downwards on the tips of leaves. Both sexes were taken at the blossom of an *Acmena* species, together with *Bindahara phocides* (Fabricius) and species of *Deudorix* Hewitson.

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